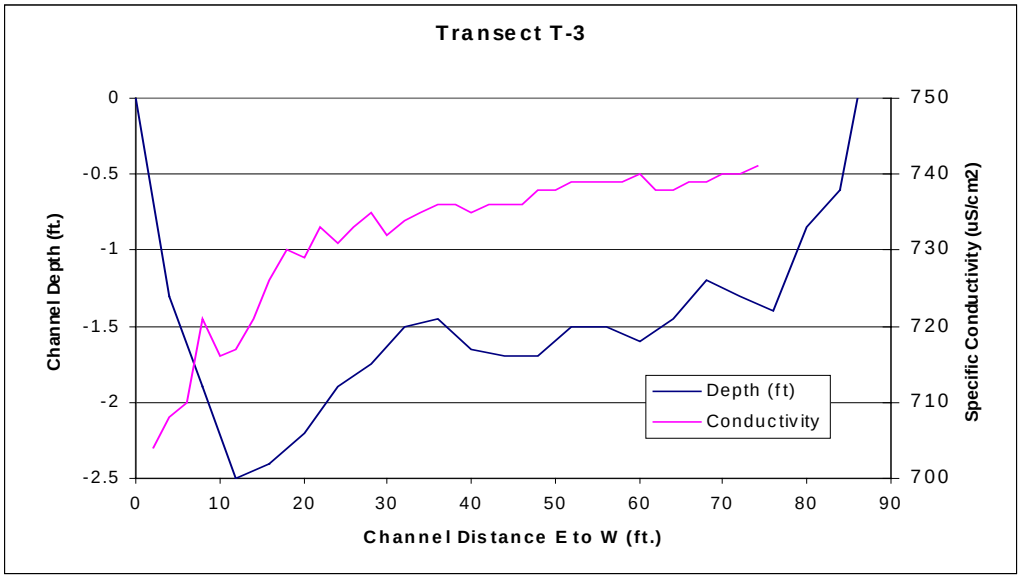
Ground Water Quality Technical Report No. 21

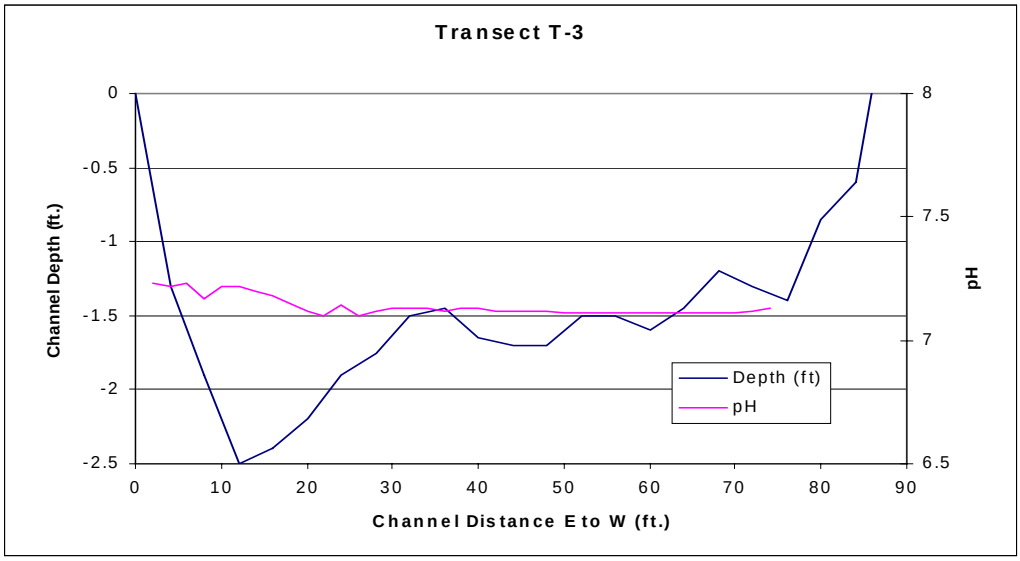
Evaluation Of Water Quality Impacts Associated With FMC And Simplot Phosphate Ore Processing Facilities, Pocatello, Idaho

Department of Environmental Quality
Technical Services Division
January 2004

List of Figures

FIGURES





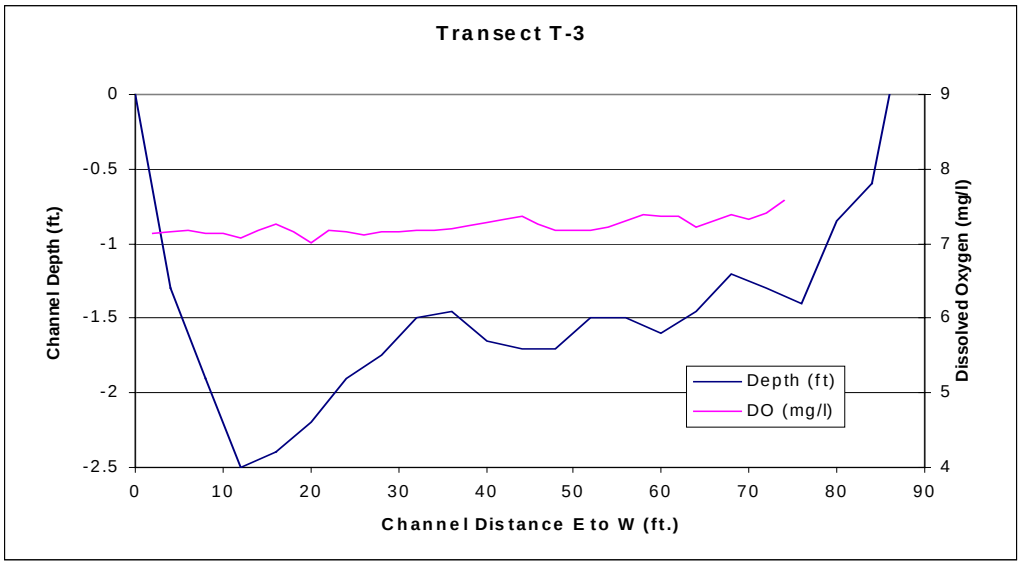


Figure 15. Portneuf River transect T-3 showing Specific Conductivity, pH, and dissolved oxygen versus east to west channel distance.

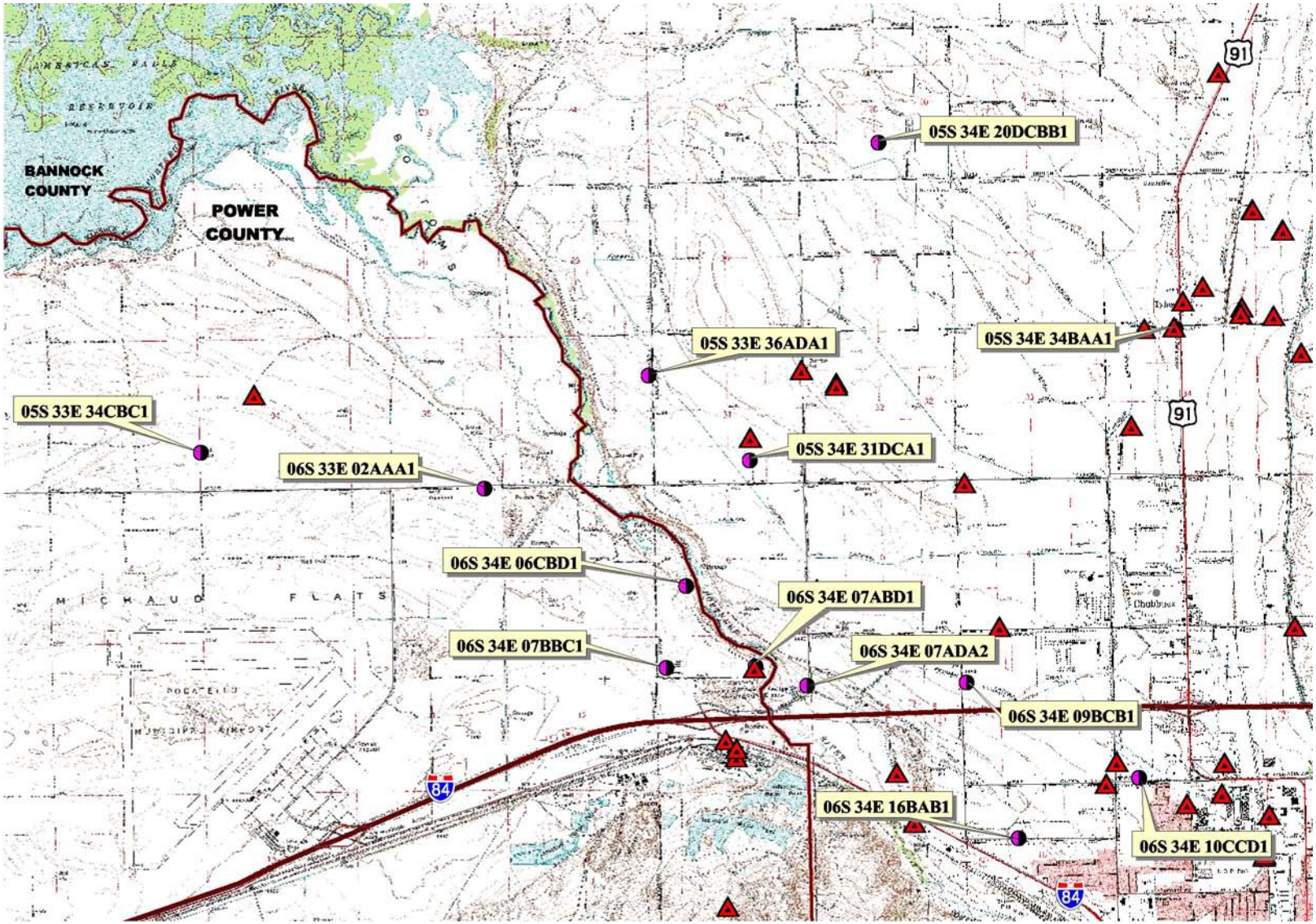


Figure 16. Station ID (Township, Range and Section) for 13 statewide monitoring wells in the vicinity of the Eastern Michaud Flats area. Triangles show locations of public water supply system (PWS) wells.

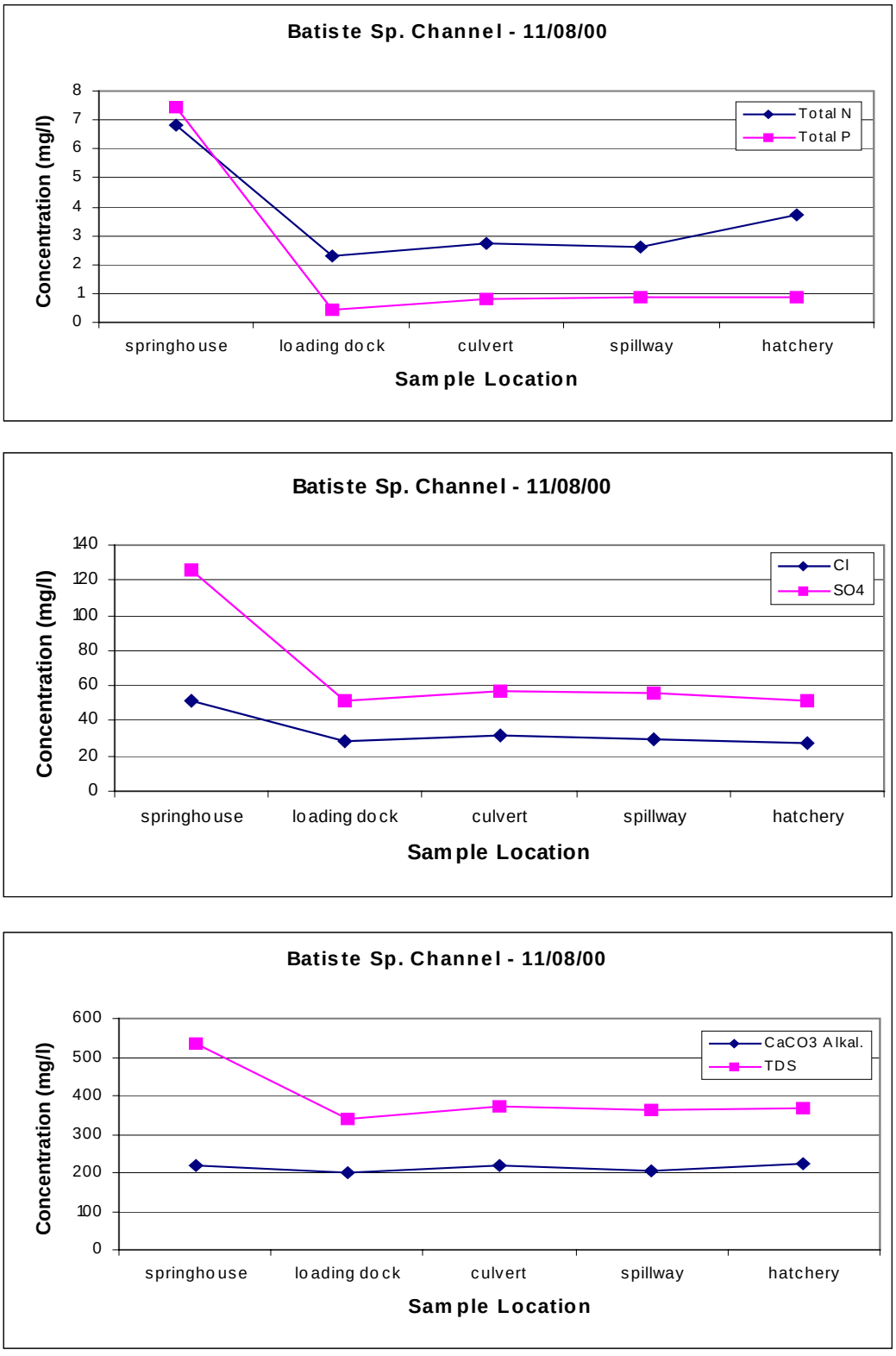


Figure 17. Water quality parameters for five sample locations along Batiste Spring channel, November 8, 2000.

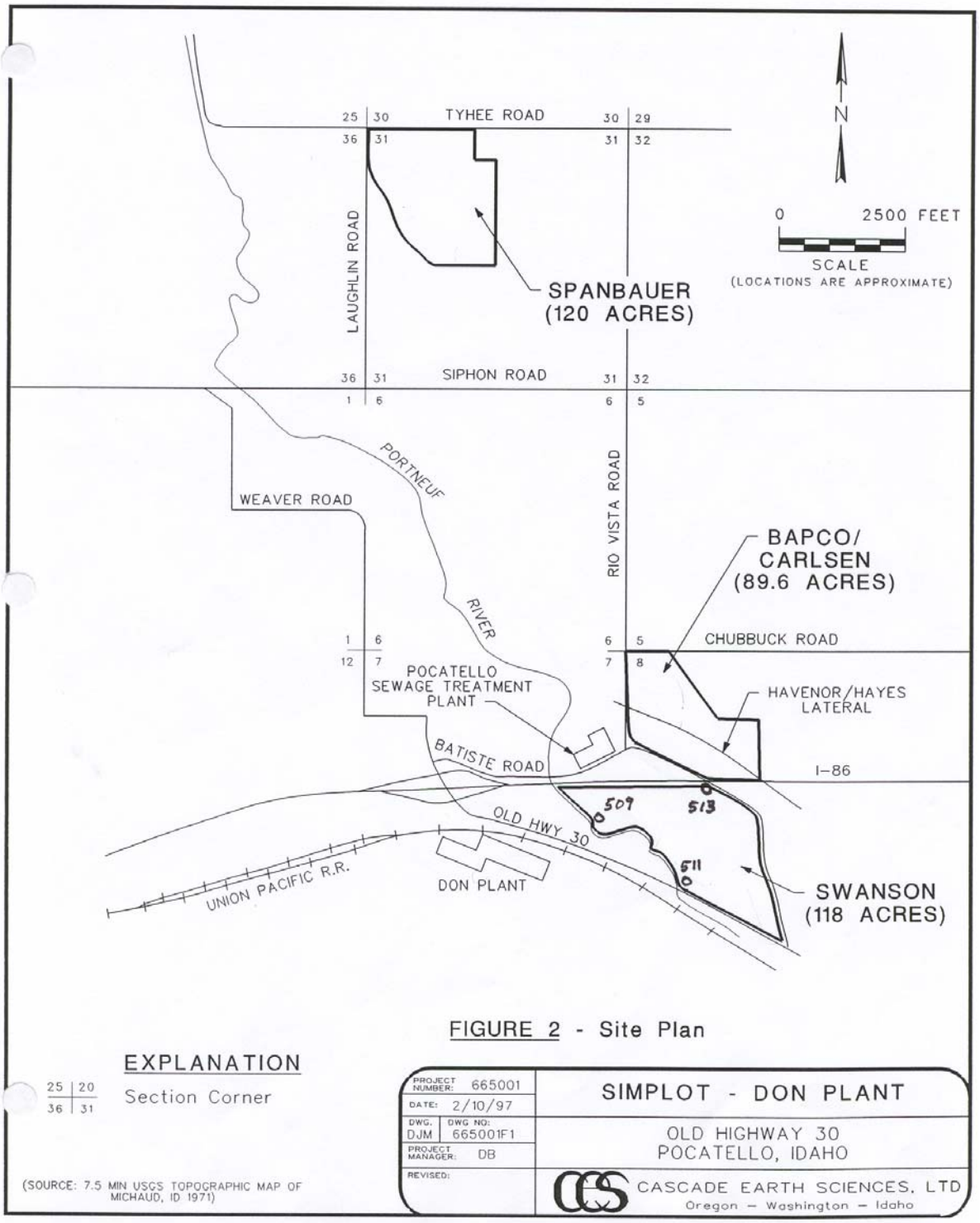


Figure 18. Location of Simplot Don Plant wastewater land application acreage on east side of Portneuf River. Locations for monitoring wells 509, 511 and 513 are shown for Swanson acreage. (Adapted from Cascade Earth Sciences, May 20, 1998.)

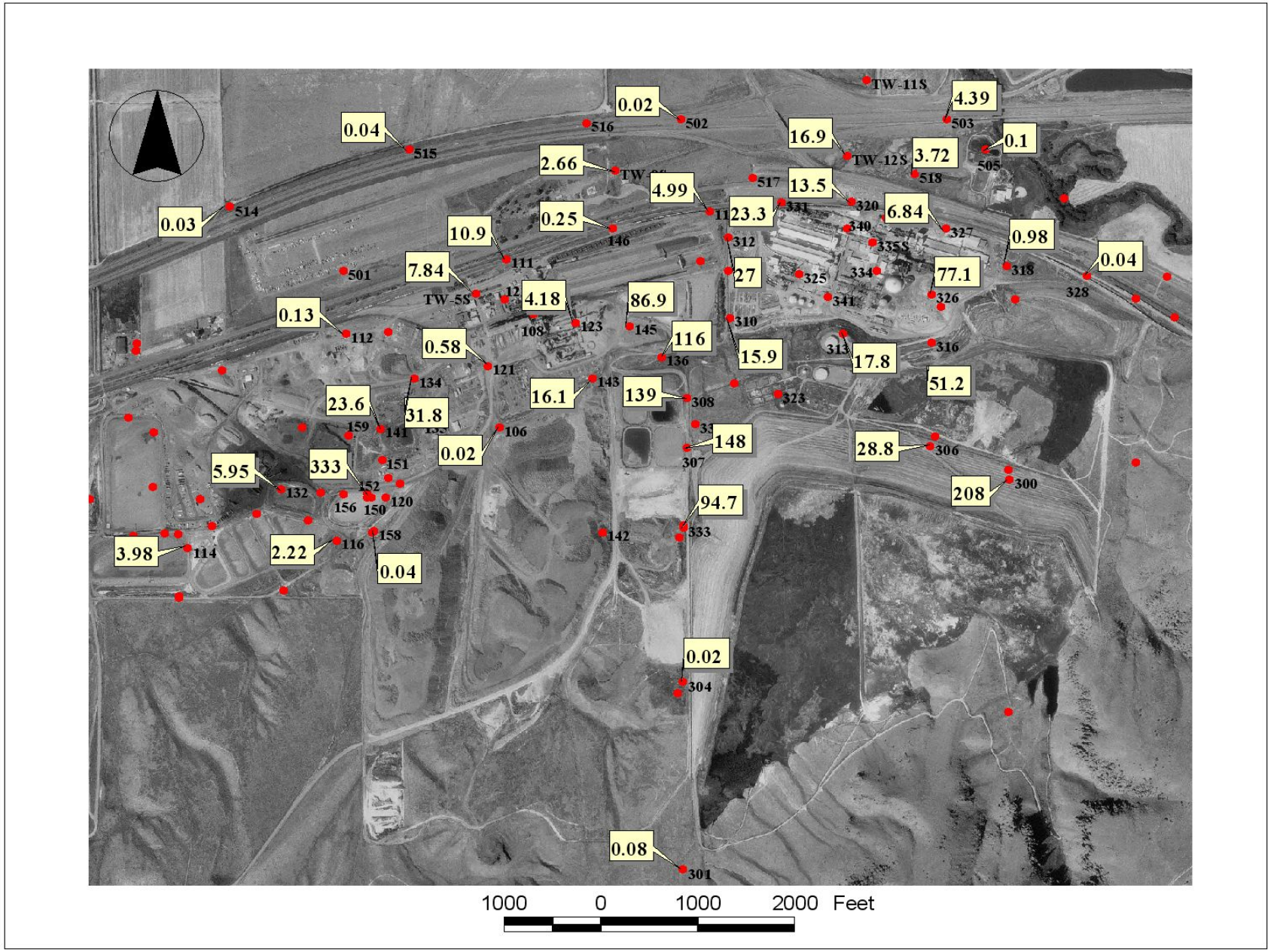


Figure 19. Site-wide orthophosphate concentrations in the shallow aquifer based on sampling conducted in December 1993.

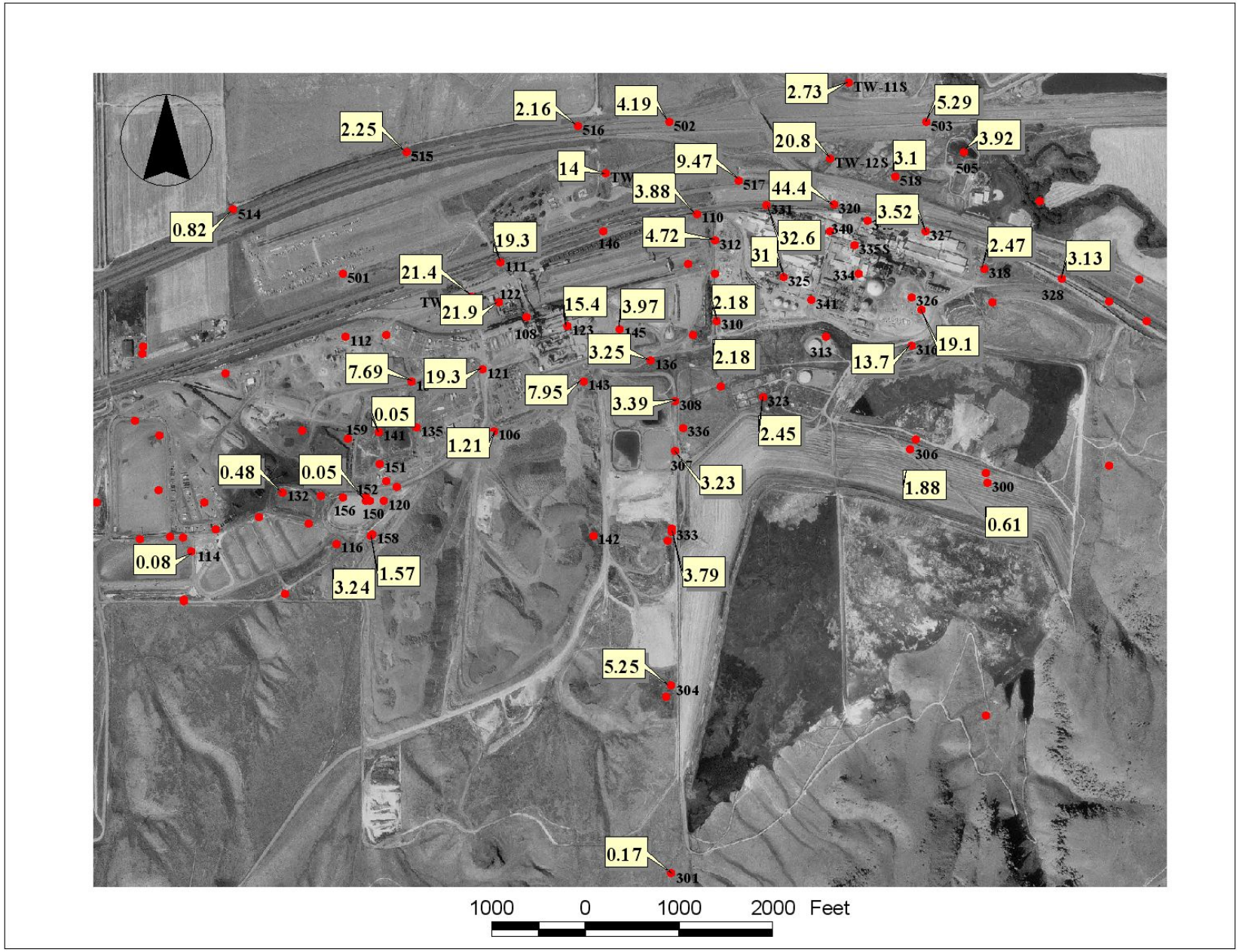


Figure 20. Site-wide nitrate concentrations in the shallow aquifer based on sampling conducted in December 1993.

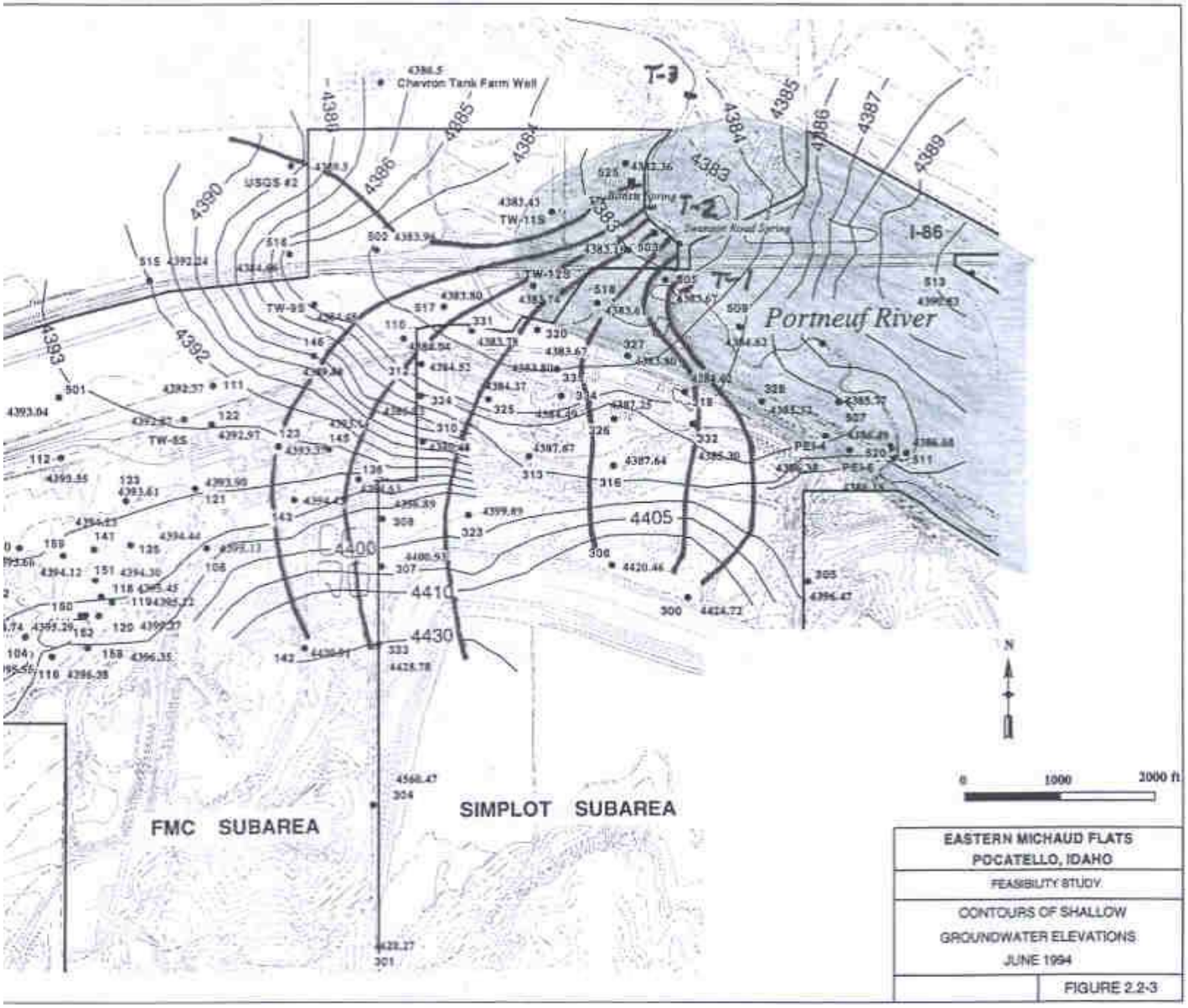
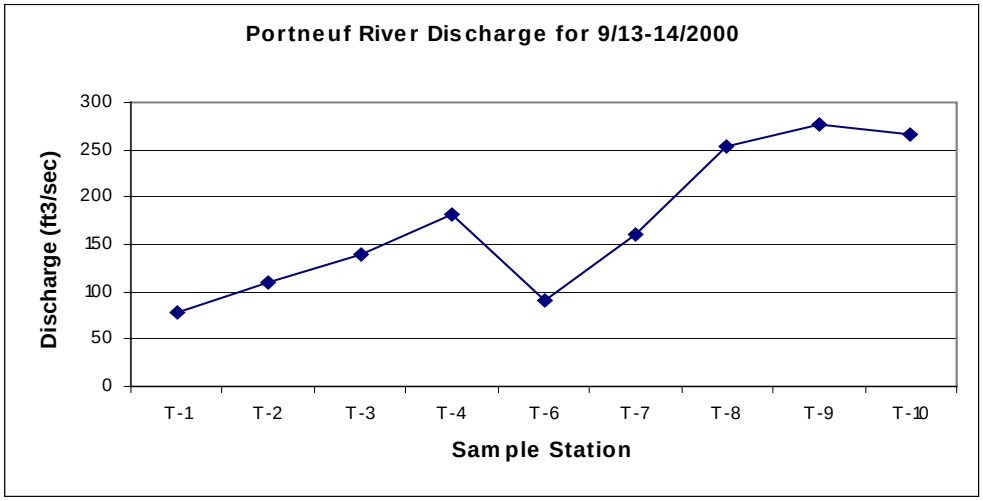
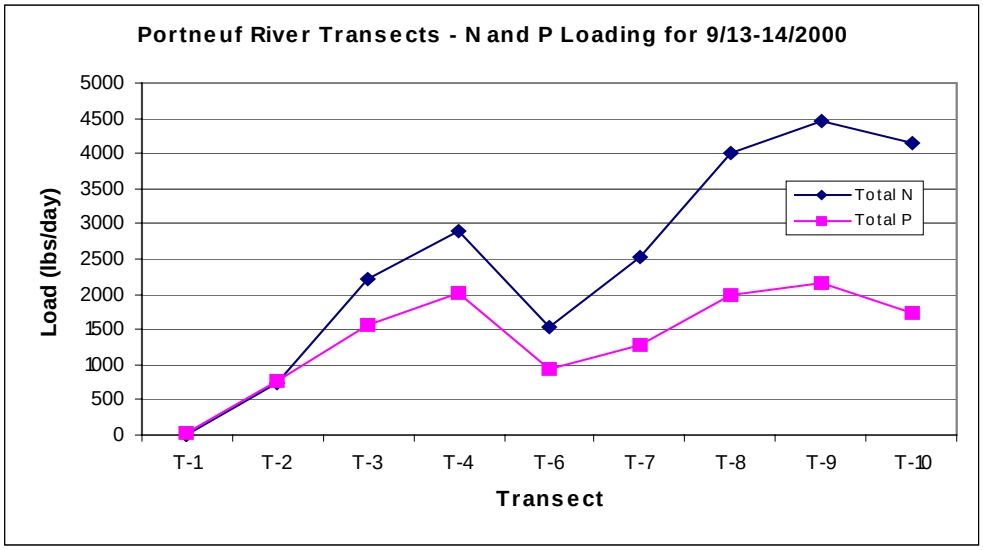


Figure 21. Ground water flowpaths for phosphorous loading calculations. American Falls Lake Beds are absent and shallow and deep aquifers are combined in the shaded area. (Adapted from Bechtel Environmental, Inc., 1994.)





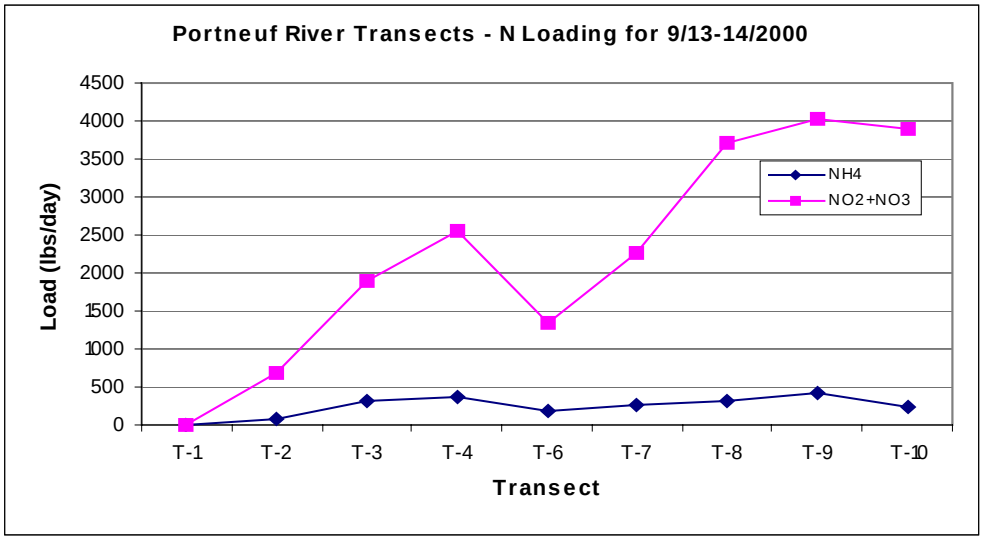


Figure 22. Discharge and loading, in pounds per day, for total nitrogen, total phosphorous, ammonia, and nitrite/nitrate for Portneuf River transects sampled September 13-14, 2000.

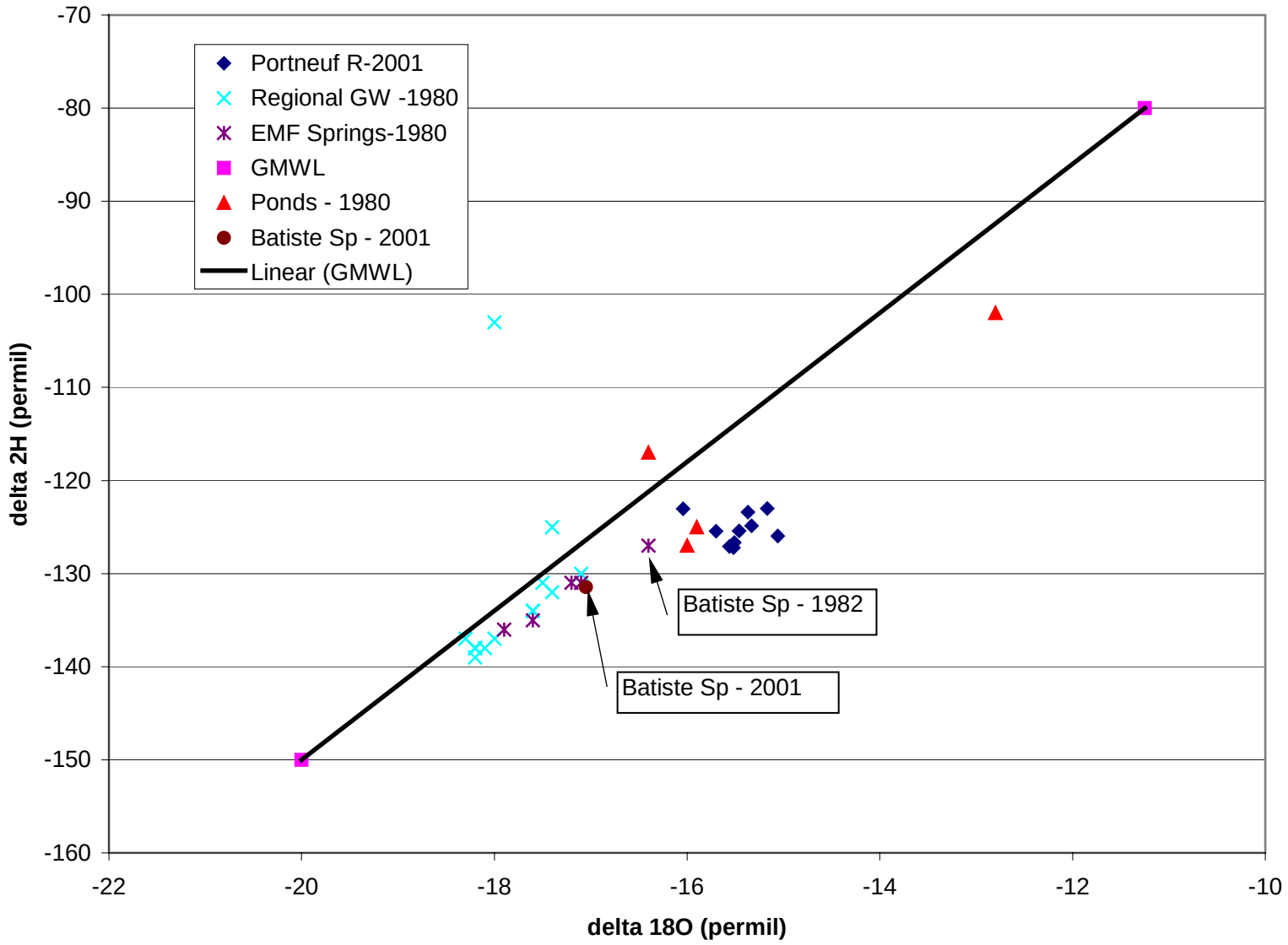


Figure 23. δ ^{18}O versus δ ^{2}H for samples collected from springs and the Portneuf River, and from industrial ponds. (Portneuf R-2001 includes transects T-1A, T-1B, T-2, T-2A and T-2B.)

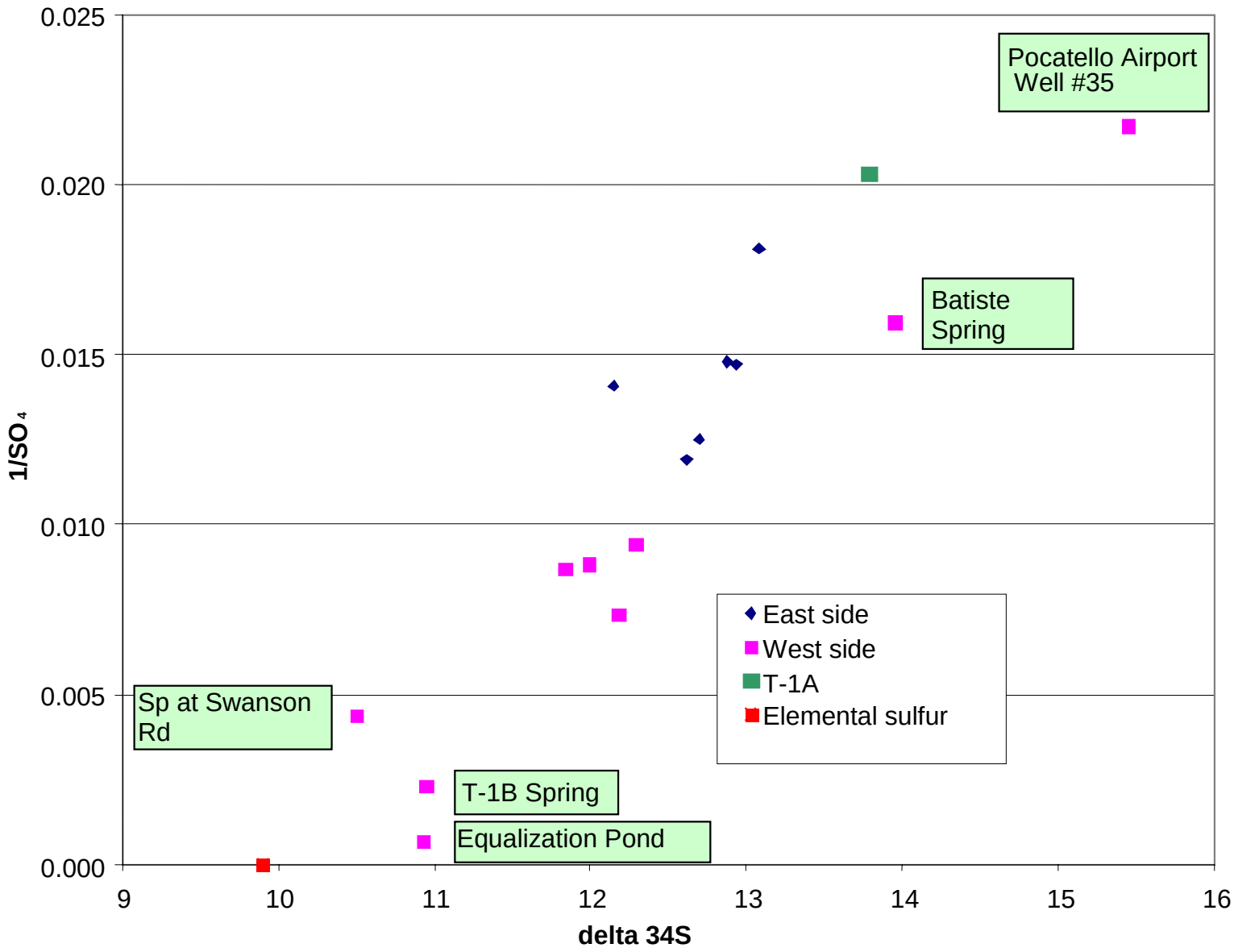


Figure 24. δ ^{34}S versus sulfate concentration for samples from the Portneuf River, springs and a City of Pocatello well.

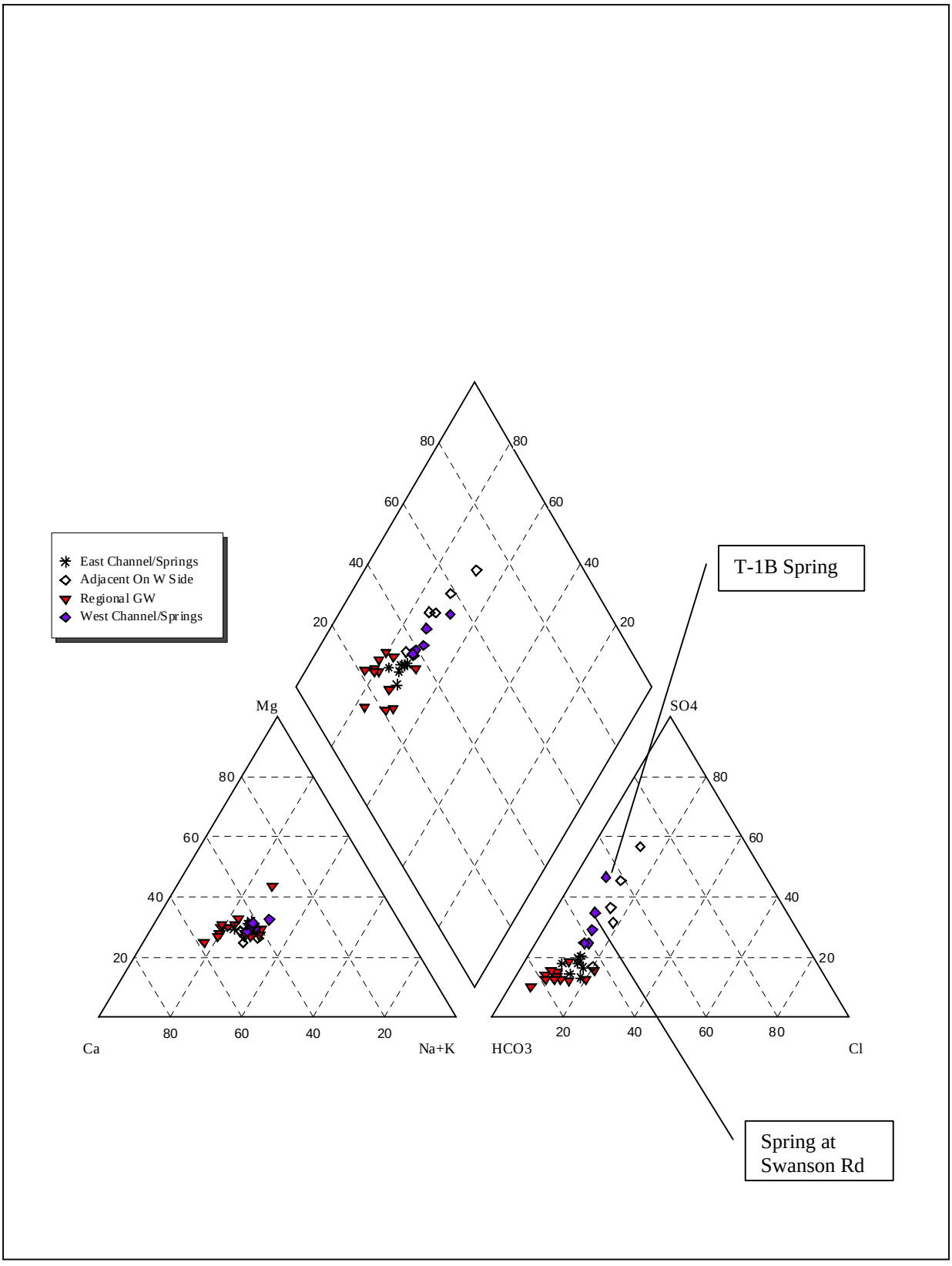
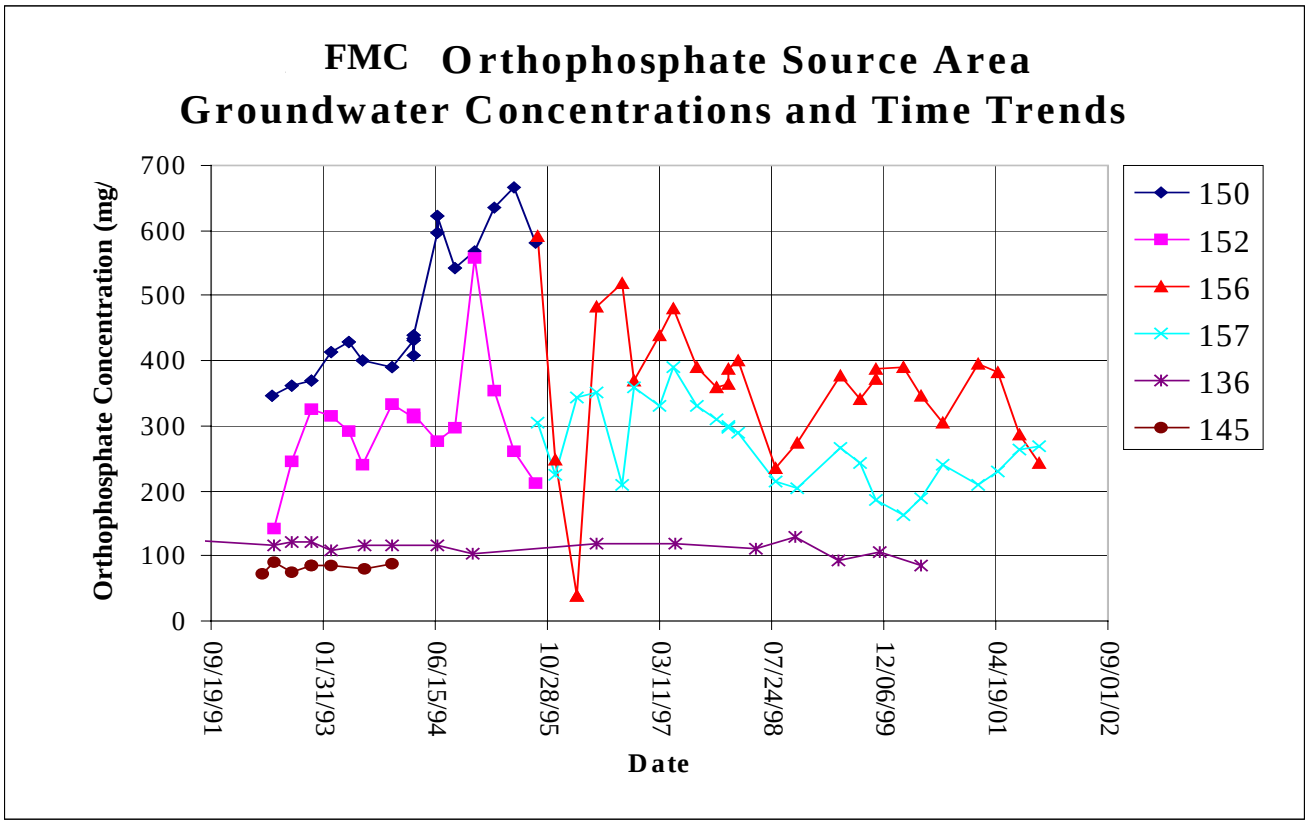


Figure 25. Major ion composition of water from Portneuf River, springs, adjacent shallow ground water, and regional ground water.



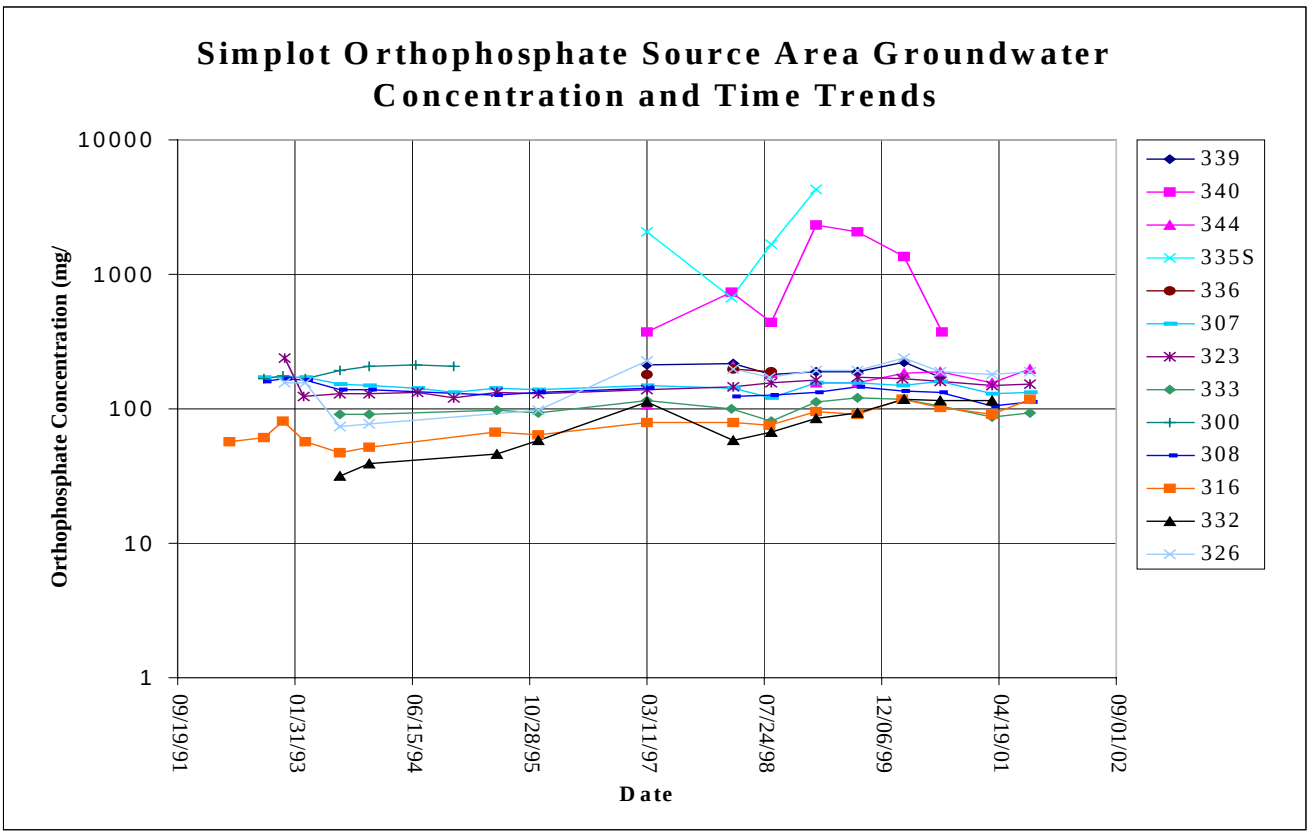


Figure 26. FMC and Simplot orthophosphate source area ground water concentrations and time trends.

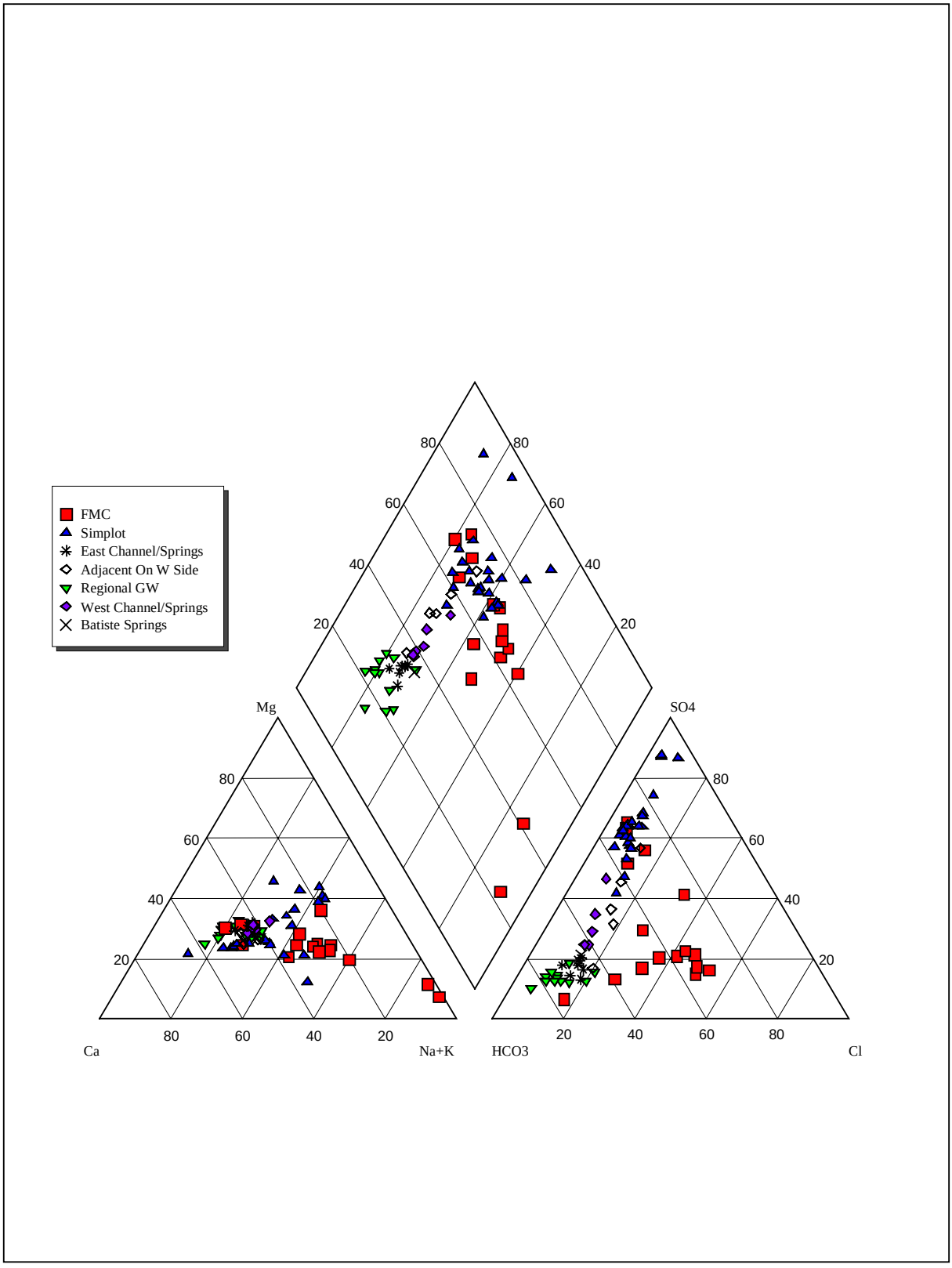


Figure 27. Major ion composition of water samples from Portneuf River, springs, and selected wells from beneath FMC and Simplot facilities.

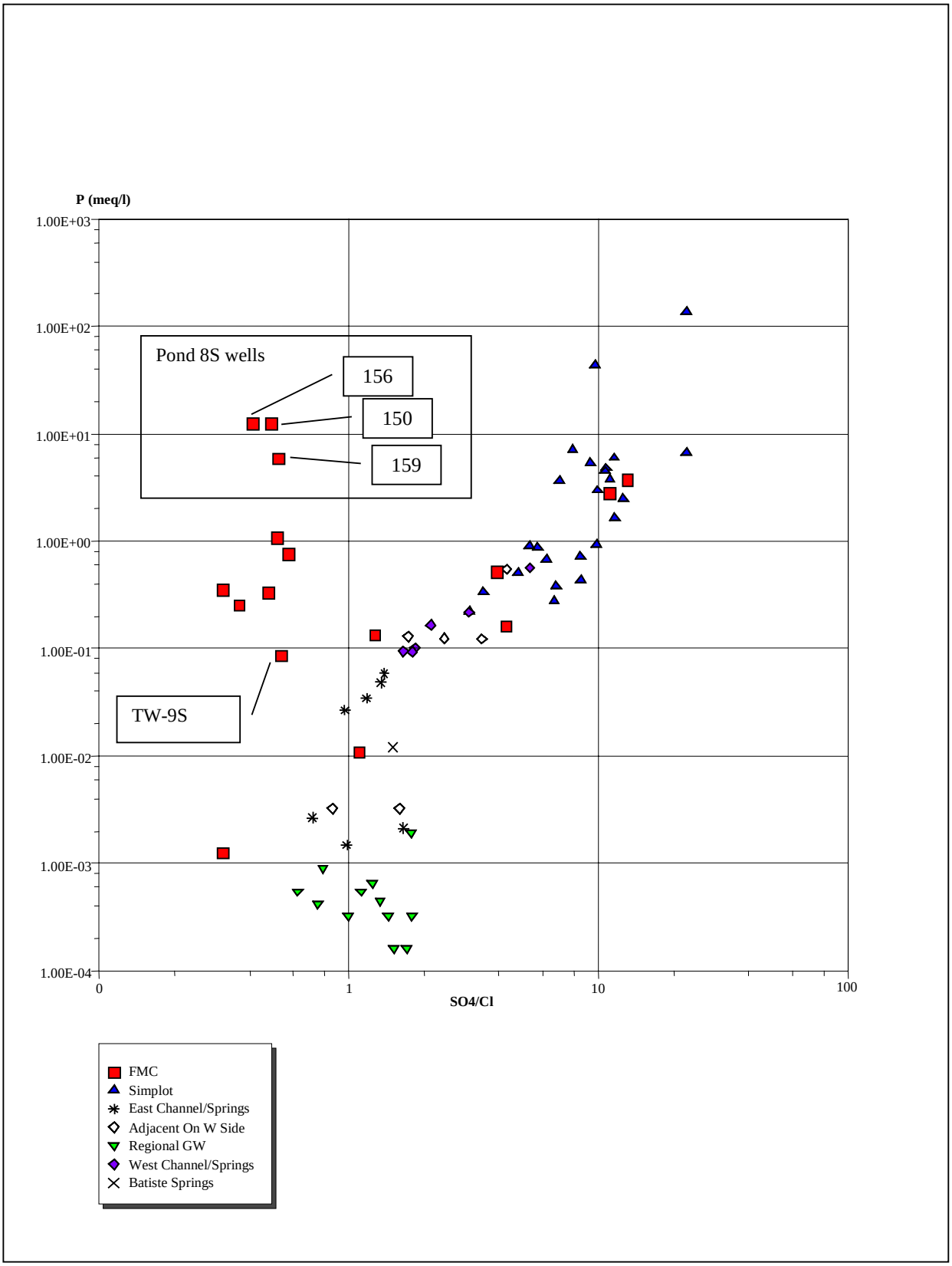


Figure 28. Orthophosphate concentration vs. sulfate/chloride ratio in water from Portneuf River, springs, and selected wells on FMC and Simplot facilities.